

Goal: Understand how the Banzhaf Power Index is Calculated

1. **Review:** Answer questions about the weighted voting system below.

$$[67 : 50, 30, 10, 5, 4, 1].$$

- (a) How many players are there? _____
- (b) What is the quota? _____
- (c) What is the total vote? _____
- (d) Is there a dictator? Explain.
- (e) Does any player have veto power? If so, find them and **justify** your conclusion.
- (f) Are there any dummy players? If so, find them and **justify** your conclusion.

2. Recall:

Coalition

Winning Coalition

Critical Player

3. Answer questions about the weighted voting system below.

$[30 : 25, 10, 5]$

(a) List **ALL** coalitions.

(b) List all **WINNING** coalitions.

(c) In each **winning** coalition, identify which players are critical.

(d) Calculate the Banzhaf Power index.

- i. Find all winning coalitions
- ii. Find all critical players
- iii. Underline critical players
- iv. Count total # underlines
- v. For each player, compute: